

REMARKS

Claims 2 through 7 and 29 are in the application, with Claim 2 having been amended. Claim 2 is the only independent claim herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claim Rejections Under 35 USC § 103(a)

Claims 2-7 and 29 are rejected as being obvious over U.S. Patent No. 6,068,782 to Brandt et al. (“Brandt”) in view of U.S. Patent No. 6,236,572 to Teshome et al. (“Teshome”).

Claim 2 is directed to an “apparatus” that includes “a substrate” and “a pair of signal traces formed directly on the substrate and spaced from each other”. The apparatus of claim 2 further includes “a filler material directly on the substrate and between the signal traces”. In addition, claim 2 specifies that “the filler material ha[s] a dielectric constant that is higher than a dielectric constant of a material of which the substrate is formed”. Finally, the apparatus of claim 2 also includes “a solder mask layer on the signal traces and on the filler material” with “the dielectric constant of the filler material being higher than a dielectric constant of the solder mask layer”.

It is noted that claim 2 has been amended to recite that the filler material is directly on the substrate. Support for this amendment is found at FIG. 1 and, e.g., page 4, lines 8-10 of the specification (filler material 44; taking dielectric layer 34 as the substrate).

In rejecting claim 2, the Examiner relies primarily on the Brandt reference. Applicants respectfully traverse the rejection on the ground that Brandt fails in important respects to support the Examiner’s reliance thereon.

For example, the Examiner cites elements 100 and 150 of the Brandt reference as corresponding to the claimed pair of signal traces. However, element 100 of Brandt is not a signal trace. Rather, as indicated at column 3, lines 5-11, element 100 is the bottom electrode of an embedded capacitor. (See also column 3, lines 26-29, 44-46 and 63-67; FIGS. 4 and 6. The main point of Brandt is the fabrication of a circuit board containing embedded capacitors.) Thus Brandt fails to disclose the pair of signal traces recited in claim 2.

Moreover, the Examiner apparently considers element 130 in Brandt to be the claimed filler material. But claim 2, as now amended recites filler material directly on a substrate (on which the signal traces are formed) and between the signal traces. Thus, even if element 100 in Brandt were a signal trace (which it is not), element 130 would still not satisfy the claimed filler material of claim 2, because element 130 in Brandt is on the lower capacitor electrode 100 (see FIGS. 1 and 4 of Brandt) rather between elements 100 and 150 in Brandt. Also, since 130 is on 100, it is not directly on Brandt's substrate 110.¹

For the foregoing reasons, it is respectfully submitted that the rejection of claim 2 should be reconsidered and withdrawn.

The other pending claims are dependent on claim 2 and are submitted as patentable on the same basis as claim 2.

CONCLUSION

Accordingly, Applicants respectfully request allowance of the pending claims. If any issues remain, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is kindly invited to contact the undersigned via telephone at (203) 972-3460.

Respectfully submitted,



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August 30, 2005
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¹ Applicants will also address certain ambiguous passages in the pending Office Action which could be read to suggest that element 120 in Brandt is considered by the Examiner to also or alternatively satisfy the claimed filler material. However, applicants respectfully point out that element 120 of Brandt cannot qualify as the claimed filler material, since claim 2 specifies that the filler material has a higher dielectric constant than that of the substrate, whereas the patternable insulator 120 in Brandt is specifically indicated to have a low dielectric constant. In this regard, the Examiner is respectfully referred to column 2, lines 19-24 and 39 of the reference.